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Show Me Agriculture

TEACHER PAGE

USING **SHOW ME AGRICULTURE**

Show Me Agriculture provides up-to-date insights about Missouri Agriculture. This issue focuses on two of Missouri's most important crops, soybeans and corn. It also includes information on an important agricultural researcher who was born in Missouri–George Washington Carver. There are so many important things that students can learn about agriculture and maybe even more importantly about work ethic, dedication, and honesty from Professor Carver.

Each of the activities in ***Show Me Agriculture*** has been developed to meet specific Show Me Standards.

Page 1 – 2. **GOALS 1.4, 2.7: CA3, CA6. SS4. S8**

Page one gives a summary of the life of George Washington Carver. From his birth as a slave at the end of the Civil War to a career of outstanding public service, Professor Carver should serve as an example for us all. The information presented in **Show Me Agriculture** is designed to demonstrate the agricultural importance of Professor Carver, particularly as it relates to our soybean and corn industries. For students who would like to do more reading, there are many excellent children's books available. The George Washington Carver National Monument is a wonderful, educational experience for your students. If you are interested in a trip to the monument, their phone number is (417)325-4151 and their web site address is: http://www.nps.gov/gwca/

Page 3. **GOALS 1.2, 1.8: M1, SS7, CA6, S8**

Missouri is a very important soybean state. Most students will not realize the importance of soybeans in their daily lives. For more soybean information, you can request information from Missouri Soybean Programs, P. O. Box 104778, 3337 Emerald Lane, Jefferson City, MO 65110 or their phone number is (573) 635-6701. The web site address is http://www.mosoy.org/

The answers to the questions are:

1. 40 x 3 = 120 beans
   40 x 2 = 80 beans
   120 beans + 80 beans = 200 beans total

2. 2001 – 1904 = 97 years ago that Professor Carver conducted his soybean research.

Page 4. **GOALS 1.8, 2.1, 3.1, 3.6: M1, S8, SS7**

Students will interpret the information on the map. Unless you are in one of the top ten counties, the students will only be able to estimate your county's soybean production. Students will have many ideas as to why your county ranks where it does. In some instances, soybeans are grown because the soil is good for soybeans, or in other counties soybeans are not grown very often because the soil is too rocky. Or perhaps your county ranks low because it is so urbanized that not very much farmland is left for crop production.

Page 5 – 6. **GOALS 1.1, 1.2, 1.8, 2.3. 3.4, 3.5, 3.6: S7, S8, M1, M3,CA4, CA6, SS4, SS7**

Corn is another extremely important agricultural crop in Missouri. Some corn is grown in every county in Missouri, although as with soybeans there is a great amount of variation between counties. Corn Farm Facts will lead your students to think about corn yields and prices. You will note that 2000 data is used – 2001 data is not yet available. Here are some answers for you to consider:

1. 2,850,000 acres of corn were planted in 2000.
2. 2,830,000 acres of corn were harvested in 2000.
3. There are several reasons that some corn might be abandoned (not harvested). For example, it was too hot in an area and the corn did not produce enough grain to be worthwhile to harvest. Or maybe, it was too wet during the harvest season, or it even flooded.
4. The average yield per acre was 143 bushels.
5. You may want to point out the variation in yield. Notice that the yield per acre varies from 97 – 143 bushels between 1996 and 2000. Most of this variation is due to weather such as too much rain or not enough rain.
6. Corn prices continue to be very low - $1.75 per bushel in 2000. Point out the extreme variation in price for this crop. Corn is selling for over one dollar per bushel less than it was selling for in 1996.
7. Corn prices vary depending on the supply. If we have a large crop of corn, the price will usually be lower. However, the problem is not as simple as it might seem, because farmers cannot predict what the weather will bring, they must plant corn and then wait and see how much grain it actually produces. Corn prices also vary based on demand of the consumers. As we develop new corn products, this creates a greater demand and should translate to a higher price. External factors can affect prices also. For example, how much corn is produced in other countries around the world? If other countries produce more, maybe there will be less demand for ours. Also, some countries have economic problems, so they do not have the money to buy corn that we would like to export to them. This question provides a nice opportunity to introduce such terms as supply, demand, import, and export.

For discussion with your class. Corn syrup is used to sweeten most soft drinks that we enjoy. Enough corn syrup can be made from a bushel of corn to sweeten over 300 cans of cola. Since corn currently sells for under $2.00 per bushel, the corn syrup to sweeten that can of cola costs less than one penny. Ask your students how much they paid for a can of cola the last time they had one. Then let discussion follow. It should lead to some excellent opportunities to discuss economics.

As students read some of the pages, it may be desirable to help them create a vocabulary list for understanding. Words that might be included are: agriculture, fertility, livestock, hybrid, legume, edible, and industrial, just to name a few.

Page 7 **GOALS 1.4, 4.1: SS4, M1, CA6, S8.**

Much of the food that your students eat will contain some soybean oil, corn starch or corn syrup. Soybean oil is very widely used in our cooking oils, margarine products, salad dressings etc. Corn syrup is the primary sweetener used in most soft drinks and candies. You might like to have the students look at the ingredient list on a can of cola. Corn syrup is probably the second ingredient listed (assuming it is not a

diet drink). The corn and soy industrial products will be less recognized by your students. Most newspapers and textbooks now use soy ink, for example. The newest crayons are made from soy oil. In the future, more of our fuel may be corn or soy based. So, you may point out to your students that the demand for these products is expected to increase. An advantage of soybeans is that, as legumes, they add nutrients back to the soil, so our soil is being improved while we produce many materials that we need.

You might like to consider a corn and soybean product scavenger hunt. Students can bring in labels or actual products that you might display in the classroom.

Page 8. **GOALS 1.1, 1.2, 1.4, 2.2, 2.3: CA 4, CA6, SS4, S8**

Professor Carver spent most of his life trying to develop new products from common crops or even throw-away items. In this activity, your students are encouraged to "invent" a new product from a Missouri crop or other agricultural product. They might use something from their garden, their yard, or from a Missouri farm that they may have visited or read about. Think about the wide variety of crops and animals that are a part of Missouri agriculture. Can they invent something that we need, something that will taste good, or something that is just new and different? Some of Professor Carver's inventions may have seemed silly at first. Who would have thought of grinding up peanuts to make a spread that we would want to eat in a sandwich? Politicians in Washington D.C. thought that Professor Carver's inventions were silly at first, so encourage students to think broadly. Students might also enjoy drawing their new product.

A video, "Yams in Space", is an excellent resource if you are interested in a further study of the development of new food products. The video takes Professor Carver's research into space, describing agricultural products and technologies that are being developed to allow us to grow food on space stations. This video should encourage students to consider agriculture from a different perspective. So often, they tend to equate agriculture with only farming. "Yams in Space" introduces the topic of agriculture in space, using some of the same crops that Dr. Carver worked with, sweet potatoes and soybeans. Information on this video is available at this web site:
http://www.ca.uky.edu/agc/dl/GEEWHIZ/catalog.htm

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Call or write to request the national Ag in the Classroom newsletter "NOTES." It's a great resource to find out what is going on with integrating agriculture into the classroom in all 50 states!
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